



ADC Commercialisation Bulletin #7

OKRA

Marketing

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Markets

The European market offers the most potential for Ugandan product. Most okra produced in Uganda is exported to the United Kingdom and the Netherlands, the two largest markets within the EU. Other potential, yet smaller, markets in the EU are Germany, Spain, France and Belgium. Unlike the United States, where okra has some more crossover appeal to the general population, okra (lady finger) is still considered an “Asian” vegetable in the United Kingdom and other major EU markets. Therefore, most demand is from the “ethnic” communities (Caribbean, African, and Asia), where prices are generally lower.

Quality remains a problem with Ugandan okra and needs to be improved to successfully expand market share. Ridge blackening and dry stalks are particularly common problems.

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Customers

Okra is generally handled by importers specializing in “Asian” vegetables. It is mainly consumed by the Asian and other ethnic populations in Europe at a relatively lower price as compared to other products. However, it is regarded by supermarket buyers as the Asian vegetable with the most potential for crossover into the mainstream market. Continuity and quality of supply from any one country is currently preventing market development. For Ugandan exporters to take advantage of this, they must invest in appropriate handling facilities.

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Volumes

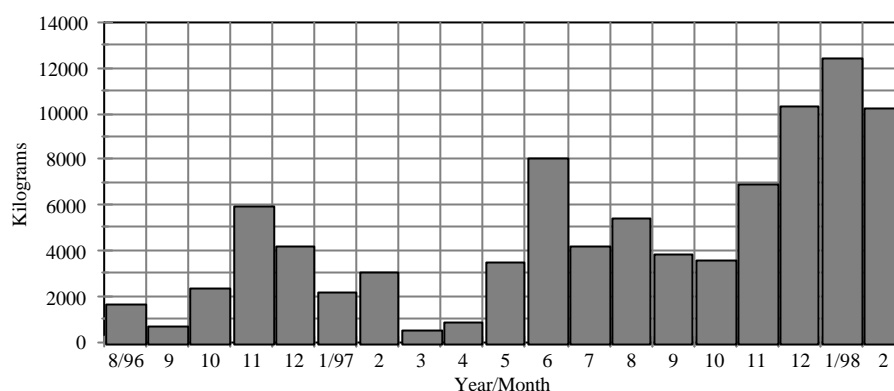
Because import volumes of okra are not reported by major markets, total demand is difficult to estimate. The largest EU markets, in order of demand, are thought to be the United Kingdom, the Netherlands, France, and Germany.

Ugandan production has steadily increased for the last two years (see Table 1). In 1997, Ugandan exports of fresh okra totaled 52 tons. This is expected to increase to 70 tons in 1998. Monthly export volumes over the period August 1996 through February 1998 are shown in Figure 1.

Table 1: Ugandan Fresh Okra Exports, 1994-1997, MTs

Year	MTs
1994	18
1995	16

Figure 1: Ugandan Exports of Okra
Aug 96 - Feb 98, kilograms



1996	23
1997	52
1998 (estimate)	70

Source: ADC survey data and CAA

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Prices

According to ITC's Market News Service, the average importer selling price in the UK was \$4.58/kg over the period January 1997 through February 1998. Prices are relatively volatile; average weekly lows and highs over this period ranged from \$3.28/kg to \$5.36/kg. Prices by supplier varied greatly, however. Kenyan product earned an average price of \$4.33/kg, while Thai product earned an average of \$5.23/kg. Fresh okra from India earned only an average of \$3.61/kg and Gambia product fetched an average of \$4.60/kg. Other suppliers over this period included Cyprus, Ethiopia, Zimbabwe, Zambia, Mexico, Pakistan, and Brazil.

The major overseas suppliers to France are Mexico and Mauritania, although price reports show some product also entering from Senegal. Over the period January 1997 through February 1998, Mexican okra averaged \$3.47/kg (importer selling price, period range of \$2.71-\$4.13/kg), while okra from Mauritania sold for \$3.17/kg (ranging from \$2.47/kg to \$3.19/kg).

Price reports for Germany give information on only one supplier, Kenya. Product from there sold for an average of \$4.76/kg, ranging between \$4.19/kg and \$5.41/kg over the fourteen month period.

Prices of Kenyan and Thai okra were both reported in the Dutch market. Kenyan okra sold for an average of \$4.70/kg (\$4.31-\$5.68/kg), while Thai okra sold at an average price of \$5.07/kg (\$4.31-\$5.68/kg).

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Competition

The presence of many other exporting countries, particularly in the UK market, requires Ugandan producers to focus on quality in order to gain market share. In the UK market alone, eleven suppliers were identified in price reports. The largest suppliers include Kenya, Thailand, the Gambia, India, Zambia, and Zimbabwe. Other competitors include Cyprus, Ethiopia, Mexico, and Brazil.

Production

6 Method

Okra is a warm season crop. The plant is a tropical annual native of Africa. It belongs to the Malvaceae family and is a relative of cotton. The plant is generally much branched, sturdy and woody, and grows to a height of 3 to 6 ft (sometimes higher). The leaves are borne alternatively and leaf margin may be slightly wavy or very deeply lobed. A flower bud appears in each leaf axil above the sixth or eighth lower leaves. As the plant develops, the lowest flower bud develops into an open flower; only one flower opens on a single stem the same day. The edible portion of the okra plant consists of the young, immature pods which must be harvested still soft (i.e. before the seeds are half grown).

In Uganda the crop is well adapted to almost all the climatic areas and soil types. However, only a small amount is grown by outgrowers (under 2 acres each) and a few “commercial farmers”.

The most common planting system in Uganda is by direct sowing. It is common for most vegetables to be transplanted during establishment, but, in the case of okra, it is advisable to directly sow into the beds and later thin out where plants are too close. The recommended spacing is 30 cm between rows and 10 cm between plants. There are some growers who can choose to plant at closer spacing, but will require extra effort in managing diseases and moisture stress. The size of the bed is 1 metre by 40 metres, giving a plant population of 1,200 plants per bed. With one hectare, planting amounts to 65 percent of area after removing walkways and dividing roads. The total plant population is 150,000 plants per hectare, which can yield 8 tonnes.

To obtain high yields and good quality okra, it is essential to harvest efficiently every two days. This means that growers and exporters must have contracts with their buyers which fit their harvesting schedule.

7 Varieties

Okra varieties vary in plant height and in the length and colour of their pods. Pods of some varieties have distinct lengthwise ridges, others are smooth and others are rough or with spines. The most recommended varieties for export from Uganda are Clemson Spineless and Pusa Sawani.

These two varieties are well known in the European market. Most Mexican, American and Caribbean okra is centered around Clemson Spineless and Annie Oakley varieties. Mexican okra is likely to be slightly shorter, thicker and sometimes dark in colour. Other varieties include Green Emerald, Lee, Prelude (PVP), Blondy, Perkins, Mammoth, Long Pod and White Velvet. Some of these are now emerging, but are almost all smooth, spineless, ribbed (angular) and mid to dark green. Emerald is one exception, being rounded.

8 Yield

Yields vary depending on varieties but on average, with the recommended spacing, a grower is expected to harvest between 5 to 8 tonnes per hectare. Okra should be harvested when tender and free of fibre.

9**Time to First Harvest/Seasonality**

Okra pods develop rapidly under good growing conditions. The first pods may be ready for harvest about 2 months after planting and the plants will continue to bear for many weeks. An okra pod reaches a very good harvesting stage 4 to 6 days after the flower opens. At this time the pods are 2.5 to 3.5 inches long (depending on variety), tender and free of fibre. If harvesting is delayed pods develop fibre and become tough. Harvesting should always correspond to the best marketing season in Europe (December - May). During the remaining months, okra can still grow well in Uganda but the market is well supplied with the same product from other growers nearer to the market and prices will be lower.

10**Pests/Disease Prevention**

Pests that damage okra include nematodes, aphids, ball worms and stink bugs. Aphids are the most common problems, but nematodes may also become serious without rotation.

Diseases that may be a problem include verticillium wilt, powdery mildew, and, to a lesser extent, fusarium wilt and leaf spots. Spray with Bayleton or Nimrod (Fungidex) for powdery mildew.

11**Fertilizer Requirements**

To help establish the young plants, a preplant application of commercial fertilizer is usually desirable. This is very important for depleted soils. In Uganda, where organic matter is available, apply 30 - 40 kilograms per bed of composite. The okra crop will benefit from nutrient supply and improved water holding capacity of the soil.

In the case of NPK, apply 40 to 60 kilograms per hectare or split application by side dressing with 20 - 30 kilograms per hectare.

12**Water Requirements**

If the soil has a good moisture supply at planting, the young plants will usually grow to a height of 3 to 6 inches (8 - 15 cm) before irrigation. Adequate moisture during harvest will encourage the rapid development of the pods. For irrigated production, such as that in Kasese, alternate irrigation to allow proper harvesting.

13**Product Specifications**

The product should be of the same variety, showing similar shape, skin colour, flavour and texture. The product should be soft, non-fibrous, and always free from shrivel. Harvested okra should be intact, sound, and free from dirt, foreign material, pests, and diseases. The market usually requires 3-5 inches in length with fresh green stalks. No browning is allowed.

Damage caused mechanically or by pests should not exceed 5 percent of the surface area. It is advisable not to harvest in the rain or when wet. For exporters without cold room facilities, okra should be harvested in the

cool of the day and shipped the same/next day. Close liaison with customers regarding size, variety and quality is essential to develop okra exports.

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Packaging

Always use lidded cardboard cartons with no staples. The recommended weight for the UK wholesale market is 5 kilograms per box. While selecting boxes for packaging, the materials should conform with EU regulations and should be easily recyclable.

Labeling is very important and should include: name and address of exporter, product type and variety, country of origin, net weight of package (kilograms), and grower identification code. The importer may require additional information.

Investment

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Cost of Production

Costs of production are given in the net margin tables for an exporter (Table 1) and a small farmer (Table 2).

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Profitability

Table 1 provides an estimate of the net margin for one export shipment of fresh okra to the UK. For a 400-kg shipment, an exporter can expect to have a net margin of Ushs 393,600. Table 2 provides an estimate of net margin for a small farmer producing fresh okra on one acre of land. The small farmer can expect a net margin of Ushs 191,400 per acre per crop. Since okra can be cropped three times per year, its annual gross margin is triple this figure and is comparable to the annual gross margins for asparagus, hot pepper, geranium oil, and other high-value crops.

Table 1: Projected Net Margin for an Export Shipment of Fresh Okra to the UK (1997, 400 kgs, Ushs)

Raw Material (400 kg x Ushs 400/kg)	160,000
Packaging (100 cartons x Ushs 1,000/each)	100,000
Packing and Transport	30,000
Off Loading	5,000
Bond Fee	15,450
Handling Charge (400 kg x Ushs 72/kg)	28,800
Clearance Charges	40,500
Airway Bill	15,450
<u>Airfreight (US\$1.30/kg)</u>	<u>603,200</u>
Total Cost	998,400
<u>C&F Revenue UK (400 kg x US\$3.00/kg)</u>	<u>1,392,000</u>
Net Revenue	393,600

Table 2: Projected Gross Margins for Ugandan Small Farmers Producing Fresh Okra (Ushs/acre per crop)

Revenue		
Yield ¹ (kgs/acre)	2,000	
Sales Price (Ushs/kg)	350	
Total Revenue		700,000
Expenses		
Seed/Plants	36,000	
Land Cultivation ²	69,500	
Fertiliser ³	50,000	
Chemicals ⁴	84,000	
Labour ⁵	204,100	
Processing ⁶	<u>65,000</u>	
Total Expenses		<u>508,600</u>
GROSS MARGIN		191,400

¹ Yield per crop. (Note that three crops are possible per year for okra.) The yield give here is a conservative estimate for irrigated production using good seed and basic level of inputs and weed control.

² Two times tractor ploughing @ Ushs 25,000 each, plus making 65 ridges @ Ushs 300/each.

³ 2 bags of NPK @ Ushs 25,000 each.

⁴ 3 litres of Ambush @ Ushs 12,000/l + 4 kgs of Dithane @ Ushs 12,000/kg

⁵ Slashing (Ushs 10,000/acre); planting (Ushs 19,500, 65 ridges @ Ushs 300/ridge); clearing field ditches (Ushs 6,000, 2 times @ Ushs 3,000); fertilizer application (Ushs 4,000, 2 bags @ Ushs 2,000/time); spraying (Ushs 16,500, 66 knapsacks @ Ushs 250/each); irrigation (Ushs 20,000 monitoring irrigation @ Ushs 20,000 per acre); weeding (Ushs 68,100 for first weeding; Ushs 19,500 for second weeding, Ushs 16,200 per acre for three times); harvesting (Ushs 60,000, 50 kgs per person per day @ Ushs 1,500/day)

⁶ Grading, packing, and weighing (Ushs 30,000, 100 kg per person per day @ Ushs 1,500/day); Miscellaneous (5 percent of revenue, total Ushs 35,000/acre).

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Investment Requirements

For small farmer production, the basic requirements are land and seed. Looking at estimated cost of production, it requires an estimated US \$508 per acre per crop (or US\$1,524 per acre for three crops in one year). To ensure product quality, an exporter should invest in a cold room.

More Information

Additional information on production, postharvest handling, and marketing of fresh okra is available at the Agribusiness Development Centre.

ADC Commercialisation Bulletins are published by the Agribusiness Development Centre of the USAID-funded Uganda's Investment in Developing Export Agriculture (IDEA) Project. The bulletins provide potential investors with a quick reference to production and market characteristics for various nontraditional export crops. For additional technical details, contact:

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